

CLAIMS

WHAT IS CLAIMED IS:

1. A streaming data delivery system comprising:

a stream database for storing a plurality of data as a program to be

- 5 transmitted in a stream over a communications network, and for storing characteristic information about the stream;

a directory server for storing a list of the program and the associated stream which is available to stream over the communications network; and

- 10 a streaming server, responsive to the characteristic information, the list, and a load condition of the streaming server associated with the stream and the list, for the controlling the streaming of the stream and the delivery of its associated list over the communications network.

2. The streaming data delivery system of claim 1, wherein the streaming

- 15 server operates in a first mode of a plurality of modes for controlling the streaming of the data.

3. The streaming data delivery system of claim 2, wherein the plurality of modes includes:

- 20 a looping mode;
- a relay mode;
- a live-broadcast mode; and
- an on-demand mode.

4. The streaming data delivery system of claim 3, wherein in the looping mode, the relay mode, or the live-broadcast mode, the streaming server transmits a common stream having identical data to each of a plurality of users.

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5. The streaming data delivery system of claim 3, wherein the streaming server transmits, in the on-demand mode, a plurality of streams to a plurality of users, with each user receiving a respective individualized stream from the plurality of streams.

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6. The streaming data delivery system of claim 1, wherein the stream database stores the plurality of data as a plurality of streams, including a first stream; and wherein the streaming server, responsive to a first load condition associated with the first stream, stops the streaming of the first stream over the communications network and controls the delivery of the list associated with the first stream over the communication network.

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7. The streaming data delivery system of claim 6, wherein the first load condition corresponds to zero load with no users accessing the first stream; and wherein the streaming server controls the delivery of the list by not sending the list over the communications network.

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8. The streaming data delivery system of claim 6, wherein the first load condition corresponds to a low load with at least one user accessing the list and with no users accessing the first stream; and

wherein the streaming server controls the delivery of the list by updating
5 the list and by sending the list over the communications network to the at least one user.

9. A system for providing streaming data to a user, the system comprising:
a client device associated with the user including:

a processor for sending data requests over a communications
10 network and for receiving data in streams from the communications network;

the communications network being connected to the client device for
transmitting data requests and streamed data; and

a streaming data delivery apparatus, connected to the communications
network for communicating to the client device through the communications network, the
15 streaming data delivery apparatus including:

a stream database for storing a plurality of data as a program to be
transmitted in a stream over the communications network, and for storing characteristic
information about the stream, wherein the plurality of data includes at least one of audio
data, video data, multimedia data, and text data;

20 a directory server for storing a list of the program and the
associated stream which is available to stream over the communications network; and

a streaming server, responsive to a data request from the user, the
characteristic information, the list, and a load condition of the streaming server associated

with the stream and the list, for the controlling the streaming of the stream and the delivery of its associated list to the client device over the communications network.

10. The system of claim 9, wherein the streaming server operates in a first
5 mode of a plurality of modes for controlling the streaming of the data.

11. The system of claim 10, wherein the plurality of modes includes:
a looping mode;
a relay mode;
10 a live-broadcast mode; and
an on-demand mode.

12. The system of claim 11, wherein in the looping mode, the relay mode, or
the live-broadcast mode, the streaming server transmits a common stream having
15 identical data to each of a plurality of users.

13. The system of claim 11, wherein the streaming server transmits, in the on-
demand mode, a plurality of streams to a plurality of users, with each user receiving a
respective individualized stream from the plurality of streams.

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14. The system of claim 9, wherein the stream database stores the plurality of data as a plurality of streams, including a first stream; and

wherein the streaming server, responsive to a first load condition associated with the first stream, stops the streaming of the first stream over the communications network to the client device, and controls the delivery of the list associated with the first stream over the communication network to the client device.

15. The system of claim 14, wherein the first load condition corresponds to zero load with no users sending respective data requests for accessing the first stream;

and

wherein the streaming server controls the delivery of the list by not sending the list over the communications network.

16. The system of claim 14, wherein the first load condition corresponds to a low load with at least one user sending an associated data request to access the list and with no users accessing the first stream; and

wherein the streaming server controls the delivery of the list by updating the list and by sending the list over the communications network to the client device associated with the at least one user.

17. A method for streaming data comprising the steps of:

storing a plurality of data as a program in a stream database to be transmitted in a stream over a communications network;

storing characteristic information about the stream in the stream database;

5 storing, in a directory server, a list of the program and the associated stream which is available to stream over the communications network; and

controlling the streaming of the stream from a streaming server and the delivery of its associated list over the communications network, including the steps of:

accessing the stream database for the characteristic information

10 about the stream;

accessing the directory server for the list associated with the stream;

evaluating a load condition of the streaming server associated with the stream and the list; and

15 streaming the stream and delivering the list in response to the characteristic information, the list, and the load condition.

18. The method of claim 17, wherein the step of controlling includes the step of:

20 operating in a first mode of a plurality of modes selected from:

a looping mode;

a relay mode;

a live-broadcast mode; and

an on-demand mode.

19. The method of claim 18, wherein in the looping mode, the relay mode, or the live-broadcast mode, the step of controlling includes the step of:

5 transmitting, from the streaming server, a common stream having identical data to each of a plurality of users.

20. The method of claim 18, wherein in the on-demand mode, the step of controlling includes the step of:

10 transmitting, from the streaming server, a plurality of streams to a plurality of users, with each user receiving a respective individualized stream from the plurality of streams.

21. The method of claim 17, wherein the step of storing the plurality of data includes the step of:

15 storing the plurality of data as a plurality of streams, including a first stream; and

wherein the step of evaluating the load condition includes the step of:

responding to a first load condition associated with the first stream

20 to perform the steps of:

stopping the streaming of the first stream over the communications network; and

controlling the delivery of the list associated with the first stream over the communication network.

22. The method of claim 21, wherein the first load condition corresponds to
5 zero load with no users accessing the first stream; and

wherein the step of controlling delivery of the list includes the step of:
preventing the delivery of the list over the communications network.

- 10 23. The method of claim 21, further comprising the step of:
receiving a request for the list associated with the first stream from at least
one user;

wherein the first load condition corresponds to a low load with at least one
user accessing the list and with no users accessing the first stream; and

- 15 wherein the step of controlling the delivery of the list includes the steps of:
updating the list; and
sending the list over the communications network to the at least
one user.